

Aramid calendered paper

Aramid paper is an insulation paper widely used in a majority of electrical equipment applications. It offers high inherent dielectric strength, mechanical toughness, flexibility and resilience. Aramid paper is processed from pure aromatic polyamide fiber by high temperature calendering.

Monolayer film



Properties

- Excellent temperature resistance, flame behavior : UL94 V-0, UL746B RTI 220°C [UL file E34739].
- No melting in air, no combustible, stable performance up to 10 years.
- Excellent chemical stability & compatibility. Not affected by most of solvents, acid and alkali corrosion resistant.
- Compatible with transformer and lubricating oils, with coolants and varnish binders as well.
- Compact structure, smooth surface, high mechanical strength, flexibility and resilience.
- High dielectric strength, low dielectric constant & loss. Low dielectric constant makes more homogeneous electric field distribution.
- Good resistance to moisture. The dielectric strength is slightly lower under high humidity conditions.
- Non-toxic, environmentally safe, comply with directives RoHS & REACH.
- High temperature resistant.
- Strong instantaneous overload capacity, may be used in almost every known field where electric insulation is required

TECHNICAL DATA	UNIT	TEST METHOD											
Nominal thickness	mm	-	0.05	0.08	0.10	0.13	0.18	0.25	0.30	0.38	0.51	0.61	0.76
Physical & mechanical properties													
Typical thickness	mm	ASTM D 374, method D	0.06	0.08	0.11	0.13	0.18	0.26	0.31	0.39	0.52	0.61	0.78
Basis weight	g/m ²	ASTM D 646	41	64	88	115	174	249	310	395	546	692	839
Density	g/cm ³	-	0.72	0.81	0.83	0.88	0.95	0.96	1.00	1.02	1.06	1.13	1.08
Tensile strength machine direction	N/cm	ASTM D 828	43	68	93	141	227	296	380	462	610	728	816
Tensile strength cross direction	N/cm	ASTM D 828	19	34	49	71	116	161	185	252	374	500	592
Elongation machine direction	%	ASTM D 828	10	12	12	16	20	22	23	22	23	21	21
Elongation cross direction	%	ASTM D 828	7	9	9	13	15	18	18	16	18	16	17
Elmendorf tear machine direction	N	TAPPI 414	0.8	1.2	1.9	2.3	3.7	5.6	7.1	9.0	14.3	N/A	N/A
Elmendorf tear cross direction	N	TAPPI 414	1.5	2.4	4.4	4.8	7.2	10.6	13.7	16.7	24.8	N/A	N/A
Initial tear strength machine direction	N	ASTM D 1004	11	16	24	31	48	69	88	110	158	191	233
Initial tear strength cross direction	N	ASTM D 1004	6	9	14	17	27	42	55	71	114	153	193
Shrinkage at 300°C machine direction	%	-	1.8	0.8	0.4	0.4	0.5	0.2	0.2	0.2	0.0	0.0	0.0
Shrinkage at 300°C cross direction	%	-	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Electrical													
Dielectric strength AC rapid rise	kV/mm	ASTM D 149	18	22	21	28	34	33	34	33	32	32	27
Full wave impulse	kV/mm	ASTM D 3426	39	39	36	55	55	63	N/A	55	55	N/A	49
Dielectric constant at 60 Hz	-	ASTM D 150	1.6	1.6	1.8	2.4	2.7	2.7	2.9	3.2	3.4	3.7	3.7
Dissipation factor at 60 Hz (x 10 ³)	-	ASTM D 150	4	5	6	6	6	6	7	7	7	7	7
UL ratings													
Flame class	-	UL94	-	-	VTM-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
HWI rating	-	UL746A	0	0	0	0	0	0	0	0	0	0	0
HAI rating	-	UL746A	3	3	3	1	1	0	0	0	0	0	0
RTI electrical	-	UL746B	220	220	220	220	220	220	220	220	220	220	220
RTI mechanical	-	UL746B	220	220	220	220	220	220	220	220	220	220	220
HVTR rating	-	UL746A	3	3	3	3	3	3	3	3	3	3	3
CTI rating	-	UL746A	3	3	3	3	3	3	3	3	3	3	3